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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/638,192	08/15/2000	Ivan A. Cowie	28549-165559	1610
26694	7590	09/20/2004	EXAMINER	
VENABLE, BAETJER, HOWARD AND CIVILETTI, LLP P.O. BOX 34385 WASHINGTON, DC 20043-9998			MUNOZ, GUILLERMO	
			ART UNIT	PAPER NUMBER
			2637	

DATE MAILED: 09/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/638,192

Applicant(s)

COWIE ET AL.

Examiner

Guillermo Munoz

Art Unit

2637

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 August 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,6-20,22-26,31-45 and 47-50 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,6-20,22-26,31-35 and 47-50 is/are rejected.
- 7) ☒ Claim(s) 36-45 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments, see page 20, line 3-12 of amendment, filed 8/13/2004, with respect to the rejection(s) of claim(s) 1, 6-26, 31-45, and 47-50 under 103 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of previously cited references and new 101 non-statutory rejections.

Applicant's arguments, see response filed 8/13/2004, with respect to examiners interpretation of "define a communication channel", have been fully considered but are not persuasive.

Applicant argues "invention relates to specifying pulse characteristics using codes in order to define a communication channel." (p.15, lines 16-17); "pulse characteristics are used for channelization" (page 15, line 20- page 16, line 1); "channels are used as paths or routes for communicating modulated information." (p.16, line 2); "As is well known in the art, *creating communication channels* is not the same as modulating information." (p.17, lines 3-4); "McCorkle et al. disclose use of *pulse* codes for integration gain, *channelization*" (p.18, line 20); "Applicants respectfully disagree that "the function of transmitting two or more signals over a single frequency using orthogonal pulse shapes to reduce the amount of interfering between the signals is the same as channelization" (p.22, lines 10-12); and "Cassia et al.'s use of orthogonal pulse shapes to modulate a first information signal coincidentally with a second information signal to produce a composite signal representing two or more data bits is not the same as channelization" (p.22, lines 15-17).

Examiner's response—

Channelization:

Channelization in an impulse radio system (as explained by Fullerton in Patent Number 5,832,035) the number of channels for impulse radio communications is only limited by the complexity and uniqueness of orthogonal (i.e., non-interfering) PN codes (Col.2, lines 15-19).

From the above explanation, it is clear that orthogonality is the primary consideration of an impulse radio channel. Therefore, the use of orthogonal pulse shapes would provide an additional degree of freedom to the already existing impulse radio channels, allowing for an increase in the number of channels. It can be further argued that "define a communications channel" reflects intended use and is not a patentable limitation, since Dress Jr. et al. suggest a plurality of uses for this additional degree of freedom.

Furthermore, how one defines a channel is subjective and not limited to the inventor's definition. The channel of an impulse radio system, as generally understood in the art, is a time-hopping code. Instant application, discloses an improvement to the already existing channel, note (page 6, lines 6-9), by adding characteristics to the pulse for increasing the number of channels. That is, the channel is capable of being defined by the occurrence of transmission and reception of data in an impulse transmission system.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1, 6-20, and 22-25 are rejected under 101 as being directed non-statutory subject matter. The claims, when taken as a whole, merely manipulate an abstract idea (pulse characteristic). A claim to an abstract idea however, falls outside the four statutory classes of inventions, namely process, machines, manufacture and composition of matters. USPTO on Computer Related Invention Guidelines provides that for a claim including such a subject matter be statutory, the claimed process must be limited to a practical application in the technological arts. The claims however do not include any limitation to a practical application in the technological arts. For instance, lets consider claim 1, "generating at least one code having at lest one code element value" which is merely "a signal per se". A signal per se is nonstatutory subject matter unless there is a limitation to a practical application in the technological arts. Since the claim fail to satisfy such a requirement, it is determined to be non-compliant with 35 USC 101 requirements and therefore non-statutory. The same analysis applies equally to each associated dependent claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 26, and 31-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCorkle et al. in view of Dress, Jr. et al..

McCorkle et al. teach an Ultra Wide Bandwidth Spread-Spectrum communications system which teach almost all the claimed subject matter, note the transmitter block diagram of Fig. 1, the receiver block diagram of Fig. 2A-2B, the codes for channelization in paragraph 0071; and associating inverted/non-inverted (non-temporal) characteristics with the channelization code; except McCorkle et al. fails to teach using the non-temporal characteristic for the purpose of increasing the number of channels in the communications system.

Dress, Jr. et al. teach a pulse transmission system which provides an additional degree of freedom to time-domain communications by controlling the shape of the transmitted pulse, note Col.3, lines 60-65, wherein Dress, Jr. et al. teach using the pulse shape for improved receiver selectivity.

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify McCorkle et al.'s communications system with Dress, Jr. et al.'s teaching of using orthogonal pulse shapes since, Dress, Jr. et al. suggest that a pulse communications systems performance would be improved with the additional degree of freedom provided such modifications.

Regarding claim 31; McCorkle et al. further teach the claimed subject matter in paragraph 0071.

Regarding claim 32; see claim 31.

Regarding claim 33; see claim 31.

Regarding claim 34; see claim 31.

Regarding claim 35; see claim 31.

Regarding claim 47; Dress, Jr. et al. teach the claimed subject matter in Fig. 6.

Regarding claim 48, see claim 26.

Regarding claim 49, Dress, Jr. et al. teach the claimed subject matter in Col.3, lines 41-50.

Regarding claim 50; McCorkle et al. do not explicitly teach "layout is a delta value layout", however, the claimed subject matter is inherent to an impulse transmission system.

Allowable Subject Matter

Claims 36-45 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The following is an examiner's statement of reasons for allowance:

Claims 36-41 are considered allowable because none of the references of record alone or in combination disclose or suggest the combination of limitations specified in the dependent claim 36, including non-temporal code element values having non-allowable regions. The closest prior art, Dress, Jr. et al., (US Patent Number 6,625,229 B1) shows a similar circuit including a generating non-temporal code element values. However, Dress, Jr. et al. fails to teach a non-allowable region of the non-temporal code element value. This distinct feature has been included in dependent claim 36, thus claim 36-41 would be allowable if rewritten in compliance with above stated objection.

Claims 42-45 are considered allowable because none of the references of record alone or in combination disclose or suggest the combination of limitations specified in the dependent claim

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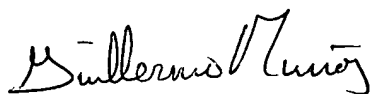
42, including establishing an offset value used to specify an exact non-temporal characteristic value used to generate the code pulse. The closes prior art, Dress et al., (US Patent Number 6,625,229 B1) shows a similar circuit including a non-temporal characteristic value assigned to a code pulse. However, Dress et al. fails to teach an offset value whereby the non-temporal code element values are generated. This distinct feature has been included in dependent claim 42, thus claim 42-45 would be allowable if rewritten in compliance with above stated objection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Guillermo Munoz whose telephone number is 571-272-3045. The examiner can normally be reached on Monday-Friday 8:30a.m-4:30p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on 571-272-2988. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



GM
September 8, 2004



JEAN B. CORRIELUS
PRIMARY EXAMINER

9/16/04